

REMARKS

The Examiner objects to the drawings under 37 C.F.R. § 1.84(p)(5) as allegedly not showing “rectangular area S.” This objection is respectfully traversed because Figure 4 of Applicants’ drawings clearly references “rectangular area S.” Accordingly, it is respectfully requested that the objection to the drawings be withdrawn.

Claims 1, 6 and 9 are independent and stand rejected under 35 U.S.C. § 103 as being unpatentable over Imakawa in view of Venkateswar et al.. This rejection is respectfully traversed for the following reasons.

Each of claims 1 and 6 recites in pertinent part, “said plurality of light beams belonging to each said beam subset are synchronously modulated by *a single* image signal for a single pixel so that each pixel on said recording medium is recorded by a single beam subset”; and claim 9 recites in pertinent part, “a photo-generator generating a beam subset composed of a plurality of light beams subjected to *a same modulation*; ... said beam subset is used to image a single pixel on said image recording medium.” Support for the claims as amended can be found, for example, on page 10, lines 7-18 of Applicants’ specification. In contrast, both Imakawa and Venkateswar et al. disclose the plurality of pixels being modulated by *different* image signals from one another. Indeed, Imakawa and Venkateswar et al. are both directed to record each pixel by a set composed of a plurality of small pixels to thereby achieve an improved resolution.

On the other hand, according to one aspect of the present invention, an improved power density of light beams on a photosensitive material can be achieved. As described in page 1, line 25 - page 2, line 6 of Applicants’ specification, in the case of recording an image on a photosensitive material using a conventional image recorder provided with a spatial light

modulator, the power of an original light beam is divided into a number of elements so that the power of the light beam applied to each pixel is disadvantageously reduced.

To solve this problem according to one aspect of the present invention, a plurality of light beams can be obtained by dividing an original light beam (first light beam) by the spatial light modulator into subsets each of which consists of N adjacent light beams, whereby the N adjacent light beams can be modulated synchronously for each subset by a *single image signal*.

Therefore, as shown, e.g., in Figs. 8 and 9 of Applicants' drawings, a plurality of adjacent small pixels modulated by a single image signal can form one pixel on a photosensitive material. Each of the N adjacent light beams can be narrowed and projected on a photosensitive material by a focusing optical system. Accordingly, the power density of the light beam is the square of N in each pixel recorded by a subset of N adjacent light beams. As a result, an insufficient exposure of the photosensitive material can be efficiently prevented and a sharp image can be recorded.

In contrast, Imakawa and Venkateswar et al. merely attempt to improve the resolution depending on the size of the small pixels, but do not disclose or suggest means by which the power density of each pixel can be improved. Whereas, an improvement in power density of each pixel can be obtained by one exemplary embodiment of the present invention by, for example, synchronously modulating a plurality of adjacent light beams by a single image signal, and applying the light beams onto a photosensitive material through a focusing optical system to bring adjacent small pixels in each subset into the same condition, namely, "all exposed" or "all unexposed." Such differences between the present invention and Imakawa and Venkateswar et al. are schematically shown in the attached reference drawing (Fig. A).

The Examiner is directed to MPEP § 2143.03 under the section entitled "All Claim Limitations Must Be Taught or Suggested", which sets forth the applicable standard for establishing obviousness under § 103:

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. (citing *In re Royka*, 180 USPQ 580 (CCPA 1974)).

In the instant case, the pending rejections do not "establish *prima facie* obviousness of [the] claimed invention" as recited in the independent claims because the proposed combinations fail the "all the claim limitations" standard required under § 103.

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as the independent claims are patentable for the reasons set forth above, it is respectfully submitted that all claims dependent thereon are also patentable. In addition, it is respectfully submitted that the dependent claims are patentable based on their own merits by adding novel and non-obvious features to the combination.

Based on the foregoing, it is respectfully submitted that all pending claims are patentable over the cited prior art. Accordingly, it is respectfully requested that the rejections under 35 U.S.C. § 103 be withdrawn.

CONCLUSION

Having fully responded to all matters raised in the Office Action, Applicants submit that all claims are in condition for allowance, an indication for which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's

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amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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